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the final particulate matter control device inlet, exceeding 17 °Centigrade (30 °Fahrenheit) above the *maximum demonstrated* particulate matter control device temperature as defined in § 60.51a. The averaging time is specified under § 60.58a(h).

(d) Within 24 months from the date of start-up of an affected facility or before February 11, 1993, whichever is later, each chief facility operator and shift supervisor of an affected facility located within a large MWC plant shall obtain and keep current either a provisional or operator certification in accordance with ASME QRO-1-1994 (incorporated by reference, see § 60.17) or an equivalent State-approved certification program.

(e) No owner or operator of an affected facility shall allow such affected facility located at a large MWC plant to operate at any time without a certified shift supervisor, as provided under paragraph (d) of this section, on duty at the affected facility. This requirement shall take effect 24 months after the date of start-up of the affected facility or on and after February 11, 1993, whichever is later.

(f) The owner or operator of an affected facility located within a large MWC plant shall develop and update on a yearly basis a sitespecific operating manual that shall, at a minimum, address the following elements of MWC unit operation:

- (1) Summary of the applicable standards under this subpart;
- (2) Description of basic combustion theory applicable to an MWC unit;
- (3) Procedures for receiving, handling, and feeding MSW;
- (4) MWC unit start-up, shutdown, and malfunction procedures;
- (5) Procedures for maintaining proper combustion air supply levels;
- (6) Procedures for operating the MWC unit within the standards established under this subpart;
- (7) Procedures for responding to periodic upset or off-specification conditions;
- (8) Procedures for minimizing particulate matter carryover;
- (9) [Reserved]
- (10) Procedures for handling ash;
- (11) Procedures for monitoring MWC unit emissions; and

(12) Reporting and recordkeeping procedures.

(g) The owner or operator of an affected facility located within a large MWC plant shall establish a program for reviewing the operating manual annually with each person who has responsibilities affecting the operation of an affected facility including, but not limited to, chief facility operators, shift supervisors, control room operators, ash handlers, maintenance personnel, and crane/load handlers.

(h) The initial review of the operating manual, as specified under paragraph (g) of this section, shall be conducted prior to assumption of responsibilities affecting MWC unit operation by any person required to undergo training under paragraph (g) of this section. Subsequent reviews of the manual shall be carried out annually by each such person.

(i) The operating manual shall be kept in a readily accessible location for all persons required to undergo training under paragraph (g) of this section. The operating manual and records of training shall be available for inspection by EPA or its delegated enforcement agent upon request.

(j)—(k) [Reserved]

[56 FR 5507, Feb. 11, 1991, as amended at 60 FR 65386, Dec. 19, 1995]

## § 60.57a [Reserved]

## § 60.58a Compliance and performance testing.

(a) The standards under this subpart apply at all times, except during periods of start-up, shutdown, or malfunction; provided, however, that the duration of start-up, shutdown, or malfunction shall not exceed 3 hours per occurrence.

(1) The start-up period commences when the affected facility begins the continuous burning of MSW and does not include any warm-up period when the affected facility is combusting only a fossil fuel or other non-MSW fuel and no MSW is being combusted.

(2) Continuous burning is the continuous, semicontinuous, or batch feeding of MSW for purposes of waste disposal, energy production, or providing heat to the combustion system in preparation

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for waste disposal or energy production. The use of MSW solely to provide thermal protection of grate or hearth during the start-up period shall not be considered to be continuous burning.

(b) The following procedures and test methods shall be used to determine compliance with the emission limits for particulate matter under § 60.52a:

(1) Method 1 shall be used to select sampling site and number of traverse points.

(2) Method 3 shall be used for gas analysis.

(3) Method 5 shall be used for determining compliance with the particulate matter emission limit. The minimum sample volume shall be 1.7 cubic meters (60 cubic feet). The probe and filter holder heating systems in the sample train shall be set to provide a gas temperature of  $160^{\circ}\pm 14^{\circ}$  Centigrade ( $320^{\circ}\pm 25^{\circ}$  Fahrenheit). An oxygen or carbon dioxide measurement shall be obtained simultaneously with each Method 5 run.

(4) For each Method 5 run, the emission rate shall be determined using:

(i) Oxygen or carbon dioxide measurements,

(ii) Dry basis F factor, and

(iii) Dry basis emission rate calculation procedures in Method 19.

(5) An owner or operator may request that compliance be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established during the initial compliance test.

(6) The owner or operator of an affected facility shall conduct an initial compliance test for particulate matter and opacity as required under § 60.8.

(7) Method 9 shall be used for determining compliance with the opacity limit.

(8) The owner or operator of an affected facility shall install, calibrate, maintain, and operate a continuous opacity monitoring system (COMS) and record the output of the system on a 6-minute average basis.

(9) Following the date the initial compliance test for particulate matter is completed or is required to be completed under § 60.8 for an affected facility located within a large MWC plant,

the owner or operator shall conduct a performance test for particulate matter on an annual basis (no more than 12 calendar months following the previous compliance test).

(10) [Reserved]

(c) [Reserved]

(d) The following procedures and test methods shall be used to determine compliance with the limits for dioxin/furan emissions under § 60.53a:

(1) Method 23 shall be used for determining compliance with the dioxin/furan emission limits. The minimum sample time shall be 4 hours per test run.

(2) The owner or operator of an affected facility shall conduct an initial compliance test for dioxin/furan emissions as required under § 60.8.

(3) Following the date of the initial compliance test or the date on which the initial compliance test is required to be completed under § 60.8, the owner or operator of an affected facility located within a large MWC plant shall conduct a performance test for dioxin/furan emissions on an annual basis (no more than 12 calendar months following the previous compliance test).

(4) [Reserved]

(5) An owner or operator may request that compliance with the dioxin/furan emissions limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established during the initial compliance test.

(e) The following procedures and test methods shall be used for determining compliance with the sulfur dioxide limit under § 60.54a:

(1) Method 19, section 5.4, shall be used to determine the daily geometric average percent reduction in the potential sulfur dioxide emission rate.

(2) Method 19, section 4.3, shall be used to determine the daily geometric average sulfur dioxide emission rate.

(3) An owner or operator may request that compliance with the sulfur dioxide emissions limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen

and carbon dioxide levels for the affected facility shall be established during the initial compliance test.

(4) The owner or operator of an affected facility shall conduct an initial compliance test for sulfur dioxide as required under § 60.8. Compliance with the sulfur dioxide emission limit and percent reduction is determined by using a CEMS to measure sulfur dioxide and calculating a 24-hour daily geometric mean emission rate and daily geometric mean percent reduction using Method 19 sections 4.3 and 5.4, as applicable, except as provided under paragraph (e)(5) of this section.

(5) For batch MWC's or MWC units that do not operate continuously, compliance shall be determined using a daily geometric mean of all hourly average values for the hours during the day that the affected facility is combusting MSW.

(6) The owner or operator of an affected facility shall install, calibrate, maintain, and operate a CEMS for measuring sulfur dioxide emissions discharged to the atmosphere and record the output of the system.

(7) Following the date of the initial compliance test or the date on which the initial compliance test is required to be completed under § 60.8, compliance with the sulfur dioxide emission limit or percent reduction shall be determined based on the geometric mean of the hourly arithmetic average emission rates during each 24-hour daily period measured between 12:00 midnight and the following midnight using: CEMS inlet and outlet data, if compliance is based on a percent reduction; or CEMS outlet data only if compliance is based on an emission limit.

(8) At a minimum, valid CEMS data shall be obtained for 75 percent of the hours per day for 75 percent of the days per month the affected facility is operated and combusting MSW.

(9) The 1-hour arithmetic averages required under paragraph (e)(7) of this section shall be expressed in parts per million (dry basis) and used to calculate the 24-hour daily geometric mean emission rates. The 1-hour arithmetic averages shall be calculated using the data points required under § 60.13(e)(2). At least two data points

shall be used to calculate each 1-hour arithmetic average.

(10) All valid CEMS data shall be used in calculating emission rates and percent reductions even if the minimum CEMS data requirements of paragraph (e)(8) of this section are not met.

(11) The procedures under § 60.1 3 shall be followed for installation, evaluation, and operation of the CEMS.

(12) The CEMS shall be operated according to Performance Specifications 1, 2, and 3 (appendix B of part 60).

(13) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with Procedure 1 (appendix F of part 60).

(14) The span value of the CEMS at the inlet to the sulfur dioxide control device is 125 percent of the maximum estimated hourly potential sulfur dioxide emissions of the MWC unit, and the span value of the CEMS at the outlet of the sulfur dioxide control device is 50 percent of the maximum estimated hourly potential sulfur dioxide emissions of the MWC unit.

(15) When sulfur dioxide emissions data are not obtained because of CEMS breakdowns, repairs, calibration checks and zero and span adjustments, emissions data shall be obtained by using other monitoring systems as approved by the Administrator or Method 19 to provide as necessary valid emission data for a minimum of 75 percent of the hours per day for 75 percent of the days per month the unit is operated and combusting MSW.

(16) Not operating a sorbent injection system for the sole purpose of testing in order to demonstrate compliance with the percent reduction standards for MWC acid gases shall not be considered a *physical change in the method of operation* under 40 CFR 52.21, or under regulations approved pursuant to 40 CFR 51.166 or 40 CFR 51.165 (a) and (b).

(f) The following procedures and test methods shall be used for determining compliance with the hydrogen chloride limits under § 60.54a:

(1) The percentage reduction in the potential hydrogen chloride emissions (%P<sub>HCl</sub>) is computed using the following formula:

$$\%P_{\text{HCl}} = \frac{(E_i - E_o)}{E_i} \times 100$$

where:

$E_i$  is the potential hydrogen chloride emission rate.

$E_o$  is the hydrogen chloride emission rate measured at the outlet of the acid gas control device.

(2) Method 26 or 26A shall be used for determining the hydrogen chloride emission rate. The minimum sampling time for Method 26 or 26A shall be 1 hour.

(3) An owner or operator may request that compliance with the hydrogen chloride emissions limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established during the initial compliance test.

(4) The owner or operator of an affected facility shall conduct an initial compliance test for hydrogen chloride as required under § 60.8.

(5) Following the date of the initial compliance test or the date on which the initial compliance test is required under § 60.8, the owner or operator of an affected facility located within a large MWC plant shall conduct a performance test for hydrogen chloride on an annual basis (no more than 12 calendar months following the previous compliance test).

(6) [Reserved]

(7) Not operating a sorbent injection system for the sole purpose of testing in order to demonstrate compliance with the percent reduction standards for MWC acid gases shall not be considered a *physical change in the method of operation* under 40 CFR 52.21, or under regulations approved pursuant to 40 CFR 51.166 or 40 CFR 51.165 (a) and (b).

(g) The following procedures and test methods shall be used to determine compliance with the nitrogen oxides limit under § 60.55a:

(1) Method 19, section 4.1, shall be used for determining the daily arithmetic average nitrogen oxides emission rate.

(2) An owner or operator may request that compliance with the nitrogen oxides emissions limit be determined

using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established during the initial compliance test.

(3) The owner or operator of an affected facility subject to the nitrogen oxides limit under § 60.55a shall conduct an initial compliance test for nitrogen oxides as required under § 60.8. Compliance with the nitrogen oxides emission standard shall be determined by using a CEMS for measuring nitrogen oxides and calculating a 24-hour daily arithmetic average emission rate using Method 19, section 4.1, except as specified under paragraph (g)(4) of this section.

(4) For batch MWC's or MWC's that do not operate continuously, compliance shall be determined using a daily arithmetic average of all hourly average values for the hours during the day that the affected facility is combusting MSW.

(5) The owner or operator of an affected facility subject to the nitrogen oxides emissions limit under § 60.55a shall install, calibrate, maintain, and operate a CEMS for measuring nitrogen oxides discharged to the atmosphere and record the output of the system.

(6) Following the initial compliance test or the date on which the initial compliance test is required to be completed under § 60.8, compliance with the emission limit for nitrogen oxides required under § 60.55a shall be determined based on the arithmetic average of the arithmetic average hourly emission rates during each 24-hour daily period measured between 12:00 midnight and the following midnight using CEMS data.

(7) At a minimum valid CEMS data shall be obtained for 75 percent of the hours per day for 75 percent of the days per month the affected facility is operated and combusting MSW.

(8) The 1-hour arithmetic averages required by paragraph (g)(6) of this section shall be expressed in parts per million volume (dry basis) and used to calculate the 24-hour daily arithmetic average emission rates. The 1-hour arithmetic averages shall be calculated using the data points required under

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§ 60.13(b). At least two data points shall be used to calculate each 1-hour arithmetic average.

(9) All valid CEMS data must be used in calculating emission rates even if the minimum CEMS data requirements of paragraph (g)(7) of this section are not met.

(10) The procedures under § 60.13 shall be followed for installation, evaluation, and operation of the CEMS.

(11) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with Procedure 1 (appendix F of part 60).

(12) When nitrogen oxides emissions data are not obtained because of CEMS breakdowns, repairs, calibration checks, and zero and span adjustments, emission data calculations to determine compliance shall be made using other monitoring systems as approved by the Administrator or Method 19 to provide as necessary valid emission data for a minimum of 75 percent of the hours per day for 75 percent of the days per month the unit is operated and combusting MSW.

(h) The following procedures shall be used for determining compliance with the operating standards under § 60.56a:

(1) Compliance with the carbon monoxide emission limits in § 60.56a(a) shall be determined using a 4-hour block arithmetic average for all types of affected facilities except mass burn rotary waterwall MWC's, RDF stokers, and spreader stoker/RDF mixed fuel-fired combustors.

(2) For affected mass burn rotary waterwall MWC's, RDF stokers, and spreader stoker/RDF mixed fuel-fired combustors, compliance with the carbon monoxide emission limits in § 60.56a(a) shall be determined using a 24-hour daily arithmetic average.

(3) The owner or operator of an affected facility shall install, calibrate, maintain, and operate a CEMS for measuring carbon monoxide at the combustor outlet and record the output of the system.

(4) The 4-hour and 24-hour daily arithmetic averages in paragraphs (h) (1) and (2) of this section shall be calculated from 1-hour arithmetic averages expressed in parts per million by volume (dry basis). The 1-hour arithmetic averages shall be calculated

using the data points generated by the CEMS. At least two data points shall be used to calculate each 1-hour arithmetic average.

(5) An owner or operator may request that compliance with the carbon monoxide emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established during the initial compliance test.

(6) The following procedures shall be used to determine compliance with load level requirements under § 60.56a(b):

(i) The owner or operator of an affected facility with steam generation capability shall install, calibrate, maintain, and operate a steam flow meter or a feedwater flow meter; measure steam or feedwater flow in kilograms per hour (pounds per hour) on a continuous basis; and record the output of the monitor. Steam or feedwater flow shall be calculated in 4-hour block arithmetic averages.

(ii) The method included in "American Society of Mechanical Engineers Power Test Codes: Test Code for Steam Generating Units, Power Test Code 4.1—1964", Section 4 (incorporated by reference, see § 60.17) shall be used for calculating the steam (or feedwater flow) required under paragraph (h)(6)(i) of this section. The recommendations of "American Society of Mechanical Engineers Interim Supplement 19.5 on Instruments and Apparatus: Application, Part II of Fluid Meters, 6th edition (1971)," chapter 4 (incorporated by reference, see § 60.17) shall be followed for design, construction, installation, calibration, and use of nozzles and orifices except as specified in (h)(6)(iii) of this section.

(iii) Measurement devices such as flow nozzles and orifices are not required to be recalibrated after they are installed.

(iv) All signal conversion elements associated with steam (or feedwater flow) measurements must be calibrated according to the manufacturer's instructions before each dioxin/furan compliance and performance test, and at least once per year.

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(v) The owner or operator of an affected facility without heat recovery shall:

(A) [Reserved]

(7) To determine compliance with the maximum particulate matter control device temperature requirements under §60.56a(c), the owner or operator of an affected facility shall install, calibrate, maintain, and operate a device for measuring temperature of the flue gas stream at the inlet to the final particulate matter control device on a continuous basis and record the output of the device. Temperature shall be calculated in 4-hour block arithmetic averages.

(8) Maximum demonstrated MWC unit load shall be determined during the initial compliance test for dioxins/furans and each subsequent performance test during which compliance with the dioxin/furan emission limit under §60.53a is achieved. Maximum demonstrated MWC unit load shall be the maximum 4-hour arithmetic average load achieved during the most recent test during which compliance with the dioxin/furan limit was achieved.

(9) The maximum demonstrated particulate matter control device temperature shall be determined during the initial compliance test for dioxins/furans and each subsequent performance test during which compliance with the dioxin/furan emission limit under §60.53a is achieved. Maximum demonstrated particulate matter control device temperature shall be the maximum 4-hour arithmetic average temperature achieved at the final particulate matter control device inlet during the most recent test during which compliance with the dioxin/furan limit was achieved.

(10) At a minimum, valid CEMS data for carbon monoxide, steam or feedwater flow, and particulate matter control device inlet temperature shall be obtained 75 percent of the hours per day for 75 percent of the days per month the affected facility is operated and combusting MSW.

(11) All valid data must be used in calculating the parameters specified under paragraph (h) of this section even if the minimum data requirements of paragraph (h)(10) of this section are not met.

(12) Quarterly accuracy determinations and daily calibration drift tests for carbon monoxide CEMS shall be performed in accordance with Procedure 1 (appendix F).

(i) [Reserved]

(j) The following procedures shall be used for calculating *MWC unit capacity* as defined under §60.51a:

(1) For MWC units capable of combusting MSW continuously for a 24-hour period, MWC unit capacity, in megagrams per day (tons per day) of MSW combusted, shall be calculated based on 24 hours of operation at the maximum design charging rate. The design heating values under paragraph (j)(4) of this section shall be used in calculating the design charging rate.

(2) For batch MWC units, MWC unit capacity, in megagrams per day (tons per day) of MSW combusted, shall be calculated as the maximum design amount of MSW that can be charged per batch multiplied by the maximum number of batches that could be processed in a 24-hour period. The maximum number of batches that could be processed in a 24-hour period is calculated as 24 hours divided by the design number of hours required to process one batch of MSW, and may include fractional batches.<sup>1</sup> The design heating values under paragraph (j)(4) of this section shall be used in calculating the MWC unit capacity in megagrams per day (tons per day) of MSW.

(3) [Reserved]

(4) The MWC unit capacity shall be calculated using a design heating value of 10,500 kilojoules per kilogram (4,500 British thermal units per pound) for all MSW.

[56 FR 5507, Feb. 11, 1991, as amended at 60 FR 65387, Dec. 19, 1995; 65 FR 61753, Oct. 17, 2000]

### § 60.59a Reporting and recordkeeping requirements.

(a) The owner or operator of an affected facility located at an MWC plant with a capacity greater than 225 megagrams per day (250 tons per day) shall provide notification of intent to construct and of planned initial start-

<sup>1</sup>For example, if one batch requires 16 hours, then 24/16, or 1.5 batches, could be combusted in a 24-hour period.